REMARKS

Claims 1-10 are all the claims pending in the application.

Entry of the Amendment is respectfully requested along with reconsideration and review on the merits.

FORMAL MATTERS

Applicants appreciate that, on the Office Action Summary sheet, the Examiner has acknowledged Applicants' claim for foreign priority and receipt of a certified copy of the priority document and that the Examiner has also returned an initialed and signed copy of the Form PTO 1449 submitted to the Patent Office on January 16, 2001.

DRAWING

The Examiner objects to the drawing as not showing every feature of the invention specified in the claims. The Examiner states that the liquid-crystal display must be shown or the feature(s) canceled from the claim(s).

Applicants respectfully submit that an additional drawing is not necessary for the understanding of the subject matter sought to be patented. However, to further prosecution, Applicants submit a new figure directed to a liquid-crystal device containing an organic electroluminescent device of Fig. 1 concurrently with a Request for Approval of Proposed Drawing. The specification is amended to reference the new Fig. 2. No new matter has been

entered. Accordingly, Applicants respectfully request withdrawal of the objection to the drawing(s).

SPECIFICATION

The Examiner objects to the Abstract of the Disclosure because it contains more than 150 words.

In response to the Examiner's objection to the length of the Abstract, Applicants amend the Abstract to shorten it. Applicants believe that the Abstract is now in compliance with length requirements and accordingly request that the Examiner's objection be withdrawn.

CLAIM REJECTIONS - 35 U.S.C. § 112

Claim 4 has been rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Claim 4 recites "the Δn^2-direction length of from 0.5 to 50 micrometers". The Examiner asserts that the index of refraction or the change in index of refraction is a constant number and is not measured in micrometers.

Applicants respond by amending Claim 4 to clarify the claim language. Claim 4 now recites "the minute regions...have a length of from 0.5 to 50 micrometers as measured in the Δn^2-direction."

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. § 112, second paragraph.

CLAIM REJECTIONS - 35 U.S.C. § 103

Claims 1-2 and 6-10 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Shirasaki et al (U.S. Patent No. 6,025,894) in view of Allen et al (U.S. Patent No. 6,111,696).

For example, as to Claim 1, the Examiner asserts that Shirasaki discloses an organic electroluminescent device (Fig. 35) comprising an organic electroluminescent element and a light-scattering film. Shirasaki also allegedly discloses that the light produced by the organic electroluminescent element being emitted from the device through the light scattering film.

The Examiner recognizes that Shirasaki discloses a light scattering film of a different design and that Shirasaki does not disclose a polarizing light scattering film. However, the Examiner cites Allen as disclosing a polarizing light scatter plate which comprises a light transmitting resin (col. 5, lines 5-21) and dispersedly contained therein another resin and the refractive index between the two resins in two directions is disclosed, which allegedly satisfy the cited limitations in Applicants' claim.

The Examiner concludes that it would have been obvious to adapt the polarized-light scattering film disclosed by Allen to the organic electroluminescent device disclosed by Shirasaki to achieve degrees of diffuse and specular reflection and transmission, wherein the

optical material is stable with respect to stress, strain, temperature differences, electric and magnetic fields and the optical material has low iridescence.

Claims 3-5 have been rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Shirasaki and Allen as applied to Claim 1 above, and further in view of Pokorny et al (U.S. Patent No. 6,461,775).

The Examiner recognizes that although Allen allegedly discloses that the film is made out of thermoplastic resin (col. 14, line 32), Allen does not disclose the glass transition temperatures of the film. However, the Examiner believes that Pokorny discloses thermoplastic material having various glass transition temperatures (col. 8, lines 58-67).

Therefore, the Examiner concludes that it would have been obvious to adapt the type of film disclosed by Pokorny to the display device of Shirasaki and Allen since Allen is only meant to point out that the thermoplastic materials have high glass transition temperatures that could be applicable in liquid crystal display applications.

Applicants respectfully traverse the rejections.

As recognized by the Examiner, the scatter plate shown in Fig. 35 of Shirasaki is a scatter film having a different design than Applicants'. The scatter film disclosed in Shirasaki (correctly, a scatter control film) is a film having a louver structure equipped with plane reflection films 122 having reflective property on both sides thereof, provided at the respective boundary of a light guiding portion 121. The purpose of the scatter film having a louver structure is to have an incident light go straight at a predetermined angle range without

reflection, and to reflect an incident light at an angle other than the above angle to scatter the same. In other words, the scatter film necessary in Shirasaki is a "scatter control film", and its angle characteristics are an important distinction from the polarized-light scattering film of the present invention and from the type of film disclosed in Allen.

The polarizing light scatter film disclosed in Allen has a scatter anisotropy to polarizing light, but any particular scattering characteristics are not designed to be at an angle of incident light in such a film.

Data showing specific reflection and permeation by the desired angle as shown in, for example, Figs. 12a and 12b of Allen can first be obtained by using a prism sheet shown by 113, in addition to a scatter plate.

Thus, the cited art does not teach or disclose to apply optical members relating to scattering, which are used in quite different purposes from organic EL devices, in different applications, and one skilled in the art would not be motivated to make such an application. In the event that the scatter control plate of Shirasaki is replaced with the combination as shown in Figs. 12a and 12b of Allen, vertically incident light reflects, and incident light toward an oblique direction curves its light path and permeates. One skilled in the art would expect this combination as establishing both transmission mode and reflection mode, but would expect that visibility markedly lowers at a reflection mode (due to reflection to visible direction).

On the other hand, the concept of the present invention that light is emitted as a polarizing light while improving external emission efficiency of an organic EL by selective

polarized light scattering of a polarized light scatter plate and confining the effect by total reflection differs from the concept of visibility improvement as disclosed in Shirasaki. Therefore, one skilled in the art would not have been motivated to combine Shirasaki and Allen to arrive at Applicants' claimed invention.

In other words, a skilled artisan would not have been motivated to combine the teachings of these references in a manner to achieve the present invention. It would not have been obvious to a skilled artisan to apply the polarizing light scatter plate of Allen to the display device of Shirasaki to achieve Applicants' invention.

Accordingly, for at least the reasons given above, Applicants respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C. § 103.

CONCLUSION

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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PATENT TRADEMARK OFFICE

Date: April 15, 2003

APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION

Please insert the following paragraph beginning at page 4, after line 16, but before the section entitled Detailed Description of the Invention:

Fig. 2 is directed to the embodiment of a liquid crystal display.

In the drawing:

3: Liquid crystal display

31: Polarizing film

32: Electrode-provided substrate

33: Liquid crystal

IN THE CLAIMS:

The claims are amended as follows:

4. (Amended) The organic electroluminescent device of claim 1, wherein the minute regions of the polarized-light scattering film which are dispersedly contained in the light-transmitting resin are formed by phase separation and have a Δn^2-direction length of from 0.5 to 50 μm as measured in the Δn^2-direction.

IN THE ABSTRACT OF DISCLOSURE:

The abstract is changed as follows:

An organic electroluminescent device [is disclosed which has a simple constitution, is excellent in device stability and emission efficiency, and attains high brightness. The organic electroluminescent device comprises] containing an organic electroluminescent element (2) and a polarized-light scattering film (1) which comprises a light-transmitting resin (11) and dispersedly contained therein minute regions (12) differing from the light-transmitting resin in birefringent characteristics and in which the difference in refractive index between the minute regions and the light-transmitting resin in the axis direction in which a linearly polarized light has a maximum transmittance, Δn^1, is smaller than 0.03 and that in a direction perpendicular to the Δn^1 direction, Δn^2, is from 0.03 to 0.5, the light produced by the organic electroluminescent element being emitted from the device through the polarized-light scattering film. Also disclosed are[:] a polarizing surface light source which comprises the organic electroluminescent device [and which has an illuminating planar surface and emits a polarized light;] and a liquid-crystal display which comprises the polarizing surface light source and a liquid-crystal cell disposed on the light emission side of the light source.